Activating Private Forest Owners
to Increase Forest Fuel Supply
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Deliverable D15

BEST PRACTISE EXAMPLES OF WOODFUEL SUPPLY CLUSTERS

Experiences from Austria

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bioenergy2020+

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Preface

This publication is a part of the AFO-project (Activating Private forest Owners to Increase forest Fuel Supply - IEE/08/435/SI2.529239, www.afo.eu.com) funded by the European Union’s Intelligent Energy Programme. The AFO-project is coordinated by VTT, Technical Research Centre of Finland. The other partners are Forestry Development Centre Tapio (Finland), Technical Centre of Forest, Wood Products and Furniture (France), Institute for Forestry Development IDF-CNPPF (France), Forestry Commission (UK), South Yorkshire Forest Partnership (UK), Energy Restructuring Agency (Slovenia), BIOENERGY 2020+ GmbH (Austria) and Environmental Projects State Ltd (Latvia).

AFO’s main objective is to increase woodfuel supply from privately owned European forests. In terms of EU-level bioenergy promotion, private forest owners (PFO’s) form a conclusive forest owner group, as they possess most of the European wood energy potential. AFO carries out various activation procedures to initiate woodfuel supply clusters among PFO’s. These clusters are brought together with the potential energy wood users, focusing on local small- and medium scale heat plants.

The project operates during 2009-12 in six countries and five specific target areas. Finland and Austria are countries of high woodfuel utilization level and strong experience of bioenergy harvesting and procurement systems. Best practices are transferred from these countries to less experienced partner countries with vast private forests ownership (France, Slovenia, Latvia and UK). Results and best practices acquired in the project will be disseminated throughout all EU member states.

Deliverable D15 - This report presents best practices for the establishment of woodfuel supply clusters, which are successfully practiced in Austria. Practical information and checklists give guidance to PFOs and Forest Cooperatives on how to build up woodfuel businesses. The report highlights the following three examples:

- Associative forest management community Gaming
- Bioenergie NÖ Ltd.
- Biomass logistic and trade centres

Subsequently, the report sums up do’s and don’ts for the establishment of cooperation models and presents a practical checklist for the formation of supply clusters.

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1 Three Best Practice examples from Austria

1.1 General information about Austrian biomass heating systems

A sharp increase in Austrian industry’s demand for wood, and in particular the rising need of biomass plant operators for wood as a fuel, has led to a fundamental transformation of the timber market from a buyer’s to a seller’s market. New marketing opportunities in terms of a range of wood as energy products, combined with an efficient way of harvesting, have opened up a new economic prosperity for the forestry industry.

The following figure shows the progression of installations both of biomass plants and combined heat and power plants starting in the early 1980’s. Some plants supported with governmental funds were constructed. The sharp increase of installed biomass boilers up from the 1990’s is mainly due to massive public funding of biomass district heating plants (up to 40 % of the investment costs of a plant). Besides, there has been a strong multiplication effect, as the “pioneer” communities demonstrated that they gain value creation and extra income from local biomass plants and sale of woodfuels. Thus, many other municipalities started their own bioenergy project.

Figure 1: Numbers of heat and heat & power plants and cumulated boiler capacity in Austria. Source: Government of Lower Austria 2008

In Austria the situation was the same as in Lower Austria. In the following figure you can see the number of total plants (101kW to 1MW and >1MW) in 1980 and 2009.
### Table 1: Number of boilers 1980 and 2009 in Austria and in the province Lower Austria. Source: Government of Lower Austria 2010

<table>
<thead>
<tr>
<th>Boiler capacity</th>
<th>In Austria</th>
<th>In province Lower Austria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>101kW-1000kW</td>
<td>&gt;1MW</td>
</tr>
<tr>
<td>Number of boilers in 1980</td>
<td>46</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Number of boilers in 2009</td>
<td>7,746</td>
<td>978</td>
</tr>
<tr>
<td></td>
<td>1,741</td>
<td>217</td>
</tr>
</tbody>
</table>

1.2 **Austrian Forest Cooperatives – Associative Forest Management Communities AFMC**

1.2.1 **The Austrian Forest Cooperatives**

The structure of Austrian Forest Cooperatives, abbreviated as FC (German: Waldverband - WV), is shown in the following figure. The Forest Cooperatives are special organisations acting under the roof of the Austrian (and provincial) Chamber of Agriculture, which is a special interest group for the agricultural holdings in Austria. Several other forestal organisations are associated or connected with the Forest Cooperative such as educational institutes, communication platforms, the Austrian biomass association, which represents the entire biomass sector in Austria as well as the Forest Wood Paper Board, the central platform for the coordination of the several wood supplying and demanding organisations. Furthermore, the Forest Cooperative is interconnected with the certification body Programme for the Endorsement of Forest Certification (PEFC), which also results in the fact that all wood marketed by the Forest Cooperatives must be certified under the PEFC scheme. Finally, the Forest Cooperative is also linked with the Confederation of European Forest Owners (CEPF).

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![Figure 2: Structure of Austrian Forest Cooperative. Source: Hierner 2010](image)

Best Practice Examples of Woodfuel Supply Clusters
1.2.2 The provincial Forest Cooperatives

The Austrian Forest Cooperative is organised in 8 provincial Forest Cooperatives, one for each provincial state of Austria (except from Vienna). These organisations were founded between the year 1969 in the Austrian province Salzburg and the year 2000 in the province Lower Austria. All 296 local Associative Forest Management Communities (AFMCs) in Austria are organised under the umbrella of the provincial Forest Cooperative (www.waldverband-noe.at).

Around 47 % of the total land area of Austria is forest land, which corresponds to 3.96 mio ha forest land in Austria. Out of this area, 873.000 ha are managed under the Forest Cooperatives. 82 % of the Austrian forest area is privately owned by 170.000 forest owners in total. Thereof 58.000 private forest owners are organised in Forest Cooperatives. These figures show, that even in Austria there is still potential to organise more forest owners in cooperatives and associations, especially because of increasing demand of wood in the panel and paper industry and the bioenergy sector.

- 8 provincial forest cooperatives (since 2000)
- 296 local associative forest management communities
- about 58,000 members (forest owners)
- 873.000 ha forest area managed in forest cooperatives

Figure 3: Provincial Forest Cooperatives in Austria. Source: Höbarth 2010

Corresponding to the large number of forest owners, most of them own just small areas of forest land, as shown in figure 4. As a result, 98 % of forest owners can be categorised as “small-scale forest holdings” (< 200 ha).
The amount of wood supplied through the Forest Cooperatives has increased since 2000, mainly due to the mobilisation of more forest owners organised in Forest Cooperatives. A peak of wood supply has been reached in 2007, when the storm Kyrill caused forest damages, which has resulted in more fellings. Because of the global economic crisis also the fellings through Forest Cooperatives has decreased in 2009. For 2010 again an increase of wood supply is forecast.

1.2.3 The associative forest management communities (AFMCs)

All provinces in Austria (excluding Vienna) have a provincial Forest Cooperative. This Forest Cooperative consists of a different number of associative forest management communities. The reasons for the individual development of AFMCs are different and can be:

- Historic reasons: cooperation and networks are traditionally strong in certain communities, e.g. in terms of agricultural associations
- Geographic reasons: e.g. cooperation and mutual support in communities along a valley
- Shared interests: collective purchasing and sale in order to benefit from economies of scale
- Number and area of forest owners in a region

<table>
<thead>
<tr>
<th>State Province in Austria</th>
<th>Number of AFMCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burgenland</td>
<td>5</td>
</tr>
<tr>
<td>Carinthia (7 regions)</td>
<td>44</td>
</tr>
<tr>
<td>Lower Austria (5 regions)</td>
<td>68</td>
</tr>
<tr>
<td>Upper Austria</td>
<td>73</td>
</tr>
<tr>
<td>Salzburg (5 regions)</td>
<td>20</td>
</tr>
<tr>
<td>Styria</td>
<td>80</td>
</tr>
<tr>
<td>Tyrol</td>
<td>2</td>
</tr>
<tr>
<td>Vorarlberg</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>294</strong></td>
</tr>
</tbody>
</table>

The Lower Austrian Forest Cooperative consists of 68 associative forest management communities with a number of 6,500 members who are responsible for 244,000 ha of forest. This provincial Forest Cooperative represents their total forest owner members in negotiations with the wood and paper industry. Today all local AFMCs are organised within the 8 provincial Forest Cooperatives and these 8 provincial Forest Cooperatives together constitute the Austrian Forest Cooperative. The several Forest Cooperatives cooperate among each other, i.e. in wood marketing issues, negotiating with the wood industry etc. With the legal form as association, actions for application for governmental or EU support are easier to undertake.
1.2.4 Example AFMC-Gaming

The associative forest management community AFMC Gaming was established in 1996 and now forms one of the 68 Lower Austrian Provincial Forest Councils. 4 private forest owners have initiated the formation of AFMC Gaming. As initial action, they have organised a meeting to which all forest owners in the district were invited. The model was of great interest for the forest owners. Thus as a result of this event, the AFMC-Gaming with 20 forest owners as the first has been established. During the following years new members have expanded the membership to 45 owners.

The AFMC Gaming was a pioneer, established prior to the formation of the Lower Austrian Forest Cooperative, which has been formed 4 years later. The original objective of the AFMC Gaming was to coordinate the application and management of structural development funds in order to develop projects for the management of their forests and the utilisation of the wood. Moreover, AFMC’s were often initiated with the objective to take up a stronger position against the saw mills and thus to jointly negotiate fair prices for supplied wood.

Due to the rising number of biomass heat plants since mid 1990ies, by now the AFMC Gaming provide an increasing amount of wood as fuel to heat plants, as well the supply of timber to the wood industry.

Today the objectives and services of the AFMC Gaming are:
- the trading of wood and wood chips (fuelwood)
- preferring contracts over several years
- supply the district heating plant Gaming with wood chips
- shared use of machinery
- support in fields of forest cultivation
- provide training for the members
- public relations

Figure 7: Team of AFMC-Gaming

Characteristics of heating plant Gaming 2005 which is the main customer of AFMC for wood chips:
- Type of customers: Restaurant, Hotel, monastery Gaming and some private flats
- Connected load: 800 kW
- Net length: 300 m
- Annual heat demand: 1,1 MWh
- Investment costs: € 230,000
- Annual wood chips demand: 2,000 bulk cubic metre, soft wood (beech)
- Wood chips price level € 14 -24 (depending soft / hard wood and moisture content)

The cooperative members are not owners of the district heating plant, they are only responsible for the woodfuel supply. The members of the associative forest management community (AFMC) Gaming provide 80% of the used woodfuel, 20% is provided from private foresters who have other contracts with the members.

1.2.4.1 Profitability of the AFMC-Gaming
An associative forest management community does not make profit from the organisation. The benefit for the members is in reaching better prices for their wood products (log wood, spit log (firewood) wood, wood chips) through collective bargaining. The AFMCs strive for long-term contracts with their consumers and with partners like machinery service or transport companies.

1.2.4.2 Organisation and handling of current businesses within AFMCs

The typical organisation of AFMCs is described based on the articles of association of the AFMC Stockenboi in Carinthia (see Annex 1). These articles are also basis for several other AFMCs in Austria. The main bodies of the AFMC are displayed in Figure 8.

At least once a year, all members (forest owners) meet in the general assembly to discuss and agree about the continuous activities of the AFMC, tenders, the management of forest land etc. The general assembly is chaired by the chairman, who takes over the lead of the AFMC. He is also responsible for the financial administration, the current business and transactions. He represents
the AFMC and negotiates with business partners (wood consumers). The auditors of the AFMC are responsible for the controlling of current businesses and supervise the orderly accounting and utilisation of resources according to the articles of association.

The arbitral court is set up in order to arbitrate all kind of potential disputes arising from the AFMC’s activities.

Figure 8: Main bodies of the Associative Forest Management Cooperative. Source: WWG Stockenboi 2010

The general activities of the AFMC are discussed and decided during the general assembly, to which all members are invited. In this way, the members decide for instance the thinning or management of a certain forest area within the community and how to manage these actions, e.g. contracting a harvesting and machinery service or harvesting the forest land themselves in a group of forest owners, ordering transport etc. The chairman is in charge of finding consumers for the harvested wood (saw mills, biomass heat plant operators etc.) and negotiating fair prices for the supplied wood.

Usually, the wood harvested in a certain forest area is proportionally valuated according to the area and quality of wood owned by the individual forest owners.

The members of an AFMC are obliged to market their wood by the Forest Cooperative (see § 7 in the articles of association). In the case a forest owner wants to fell wood for its own need, this will be agreed with the chairman of the AFMC.

A recent advancement in the structure of AFMCs is the organisation of regional marketing units (a group of AFMCs) under the lead of a full-time manager. This structure is considered to optimise the regional marketing of wood in certain regions.

Other activities initiated by the provincial Forest Cooperatives are e.g. special services for forest owners living remote from their forest lands (full service for forest owners). Forest Cooperatives also start youth work in order to get young people (forest owners) interested for their woodland and/or to acquire future staff for the management of AFMCs.
1.2.4.3 Strengths and Weaknesses

The total forest land organised under the 8 provincial Austrian Forest Cooperatives altogether represents the biggest share of forest ownership in Austria, beside the forest land of the Austrian federal forest company (ÖBf) and a couple of owners of large forest areas. The same proportion of state owned forest land and forest land organised by associative forest management communities can be found in the local provinces. This is why the Forest Cooperatives are an important price negotiator with the timber and saw milling industry. Due to the high number of members the AFMC is represented in each region and sub-region. Information is presented informally and in regular member newsletters published, so that all members are well informed. Member fees (15-25 €) and payments from timber sales (≈0.5 €/m³) are used for financing the organisation. Excellent education and best practice from professional foresters are shared with all members in practical sessions, such as field trips, excursions, chain saw training etc.

The AFMC organises market interventions, such as in cases of high timber availability such as like storms or pest infestations or in periods of low prices. The arrangements can be extra ordinary negotiations with wood customers or the preparation of bulk volume. This storage method allows long storage periods. In this case, timber is often humidified in order to prohibit bark beetles or other insects. Before final use of the timber, it has to be dried again. The moisture content is comparable to freshly harvested wood. This method is quite common in case of big storms or to store huge volume of wood (see figure 8).

The success of AFMC depends on several factors like private individuals’ motivation, educational levels of members and the engagement of the head of the AFMC.
1.3 Bioenergie NÖ Ltd. (Niederösterreich)

1.3.1 Description Bioenergie NÖ

The cooperative Bioenergie NÖ Ltd. (http://www.agrarplus.at/projekte.energie.benoe.php) was established in August 2003 by the Agricultural Chamber of Lower Austria and “Agrar Plus”, which is an organisation for the development of agricultural business.

The cooperative Bioenergie NÖ now implements and operates small scale biomass heat plants in Lower Austria. The cooperative enables the establishment of a profitable heating plant quickly, essential for local governments and residential cooperatives. The cooperative members are farmers or foresters, who have to pay a membership fee of € 600. Bioenergy NÖ has limited liability and works at cost. A critical success factor for the cooperative has been a strong relationship with the Forest Cooperatives and responsibility for the accountancy and costing functions.

Figure 11: Organisational chart Bioenergie NÖ
Economic success is guaranteed by the following:
- Working at cost
- Structured accounting plan
- Specified quality standards
- Sensitivity analysis of markets
- Controlling

Characteristics of heat plants under Bioenergie NÖ:
- Members: 330
- Number of biomass plants developed: 49
- Number of customers: 339
- Connected load: 9,410 kW
- Net length: 8,930 m
- Annual heat demand: 12,000 MWh
- Investment costs: 6,755,570,- €
- Annual wood chips demand: 22,000 bulk cubic metre

The cooperative members are the owners of the Bioenergie NÖ and form self-sufficient ‘communities’ to operate the heat plants up to 1 MW and are responsible for the daily operation of the heat plant. Bioenergie NÖ wants to be a professional and reliable partner for housing developers and municipalities. Key projects are the biomass heat supply to large residential buildings, children’s nurseries, schools, community centres and civic centres with heat networks.

1.3.2 EXAMPLE - Heat plant Hofstetten Grünau

1.3.2.1 Project Inception

In November 2009 the 500th heat plant of Bioenergie NÖ was put into operation in the municipality Hofstetten – Grünau, which has about 2,500 inhabitants. The initiator of this project was a member of the local farmer association, Mr. Patscheider. He wanted to build a heat plant, because the old oil boiler of the municipality centre had to be replaced. Mr. Patscheider approached the municipality and Bioenergie NÖ for help.
During the implementation phase some problems were overcome such as difficulty finding members for the co-op, which should operate the heat plant. This problem was addressed with the support of the associative forest management community (AFMC), which called special meetings to mobilise members to supply wood chips. Now a cooperative with 30 members operates the heat plant and is responsible for the forest fuel supply. The second challenge was the site selection. There were problems with the potential neighbours, who were afraid of particulate emission and noise. These problems have been solved with the help of personal meetings and information sessions, which overcame any concerns of the residents. The whole implementation phase from the initial idea to commissioning of the heat plant lasted about three years. Due to the support of the Bioenergie NÖ there were no problems regarding financing and funding.

1.3.2.2 Description of the procurement chain

The biomass suppliers are responsible for the forest work related to harvesting, chipping and transportation. Every year, about 1,200 bulk cubic metres of wood are transported to the heat plant, Hofstetten-Grünau. The delivery schedule is arranged by telephone, with delivery carried out by agricultural vehicles and dump trailers, or truck. The heat plant has a shed, which is designed for the storage of 300 bulk cubic metre of wood chips.

1.3.2.3 Profitability

The investment costs amounted to €580,000. The payback period is around 13 years. A subsidy from 30% of investment costs (fund for rural development) was obtained. The private forest owners gain about €21 / bulk cubic metre of their wood chips.

1.3.2.4 Strengths and Weaknesses

Bioenergie NÖ is responsible for the profitability of the heat plant. The members benefit from the low individual risk and exchange of experience with operating a heat plant. With the support of the Associative Forest Management Community (AFMC) the quality of wood chips and security of supply is guaranteed. While the cooperative members of Bioenergie NÖ do not directly bear the risk for their individual heat, the potential risk of unprofitable heat plants is distributed to all cooperative members.
1.4 Biomass logistic and trade centres

Under the initiative of the EU project "Biomass Logistic and Trade Centres" (http://nuke.biomasstradecentres.eu) the Forest Cooperative Styria and the Styrian Chamber of Agriculture, developed a concept for the realisation of biomass centres, which sell wood biomass for energy use and accelerating the regional added value of this product. The EU project finished in Oct. 2010, the project coordinator was AIEL - Italian Agriforestry Energy Association (IT), the Forest Cooperative Styria is project partner.

The main project’s idea was creating and/or enforcing a place with the optimum logistics and trading organisation where different biomass fuels (e.g. logs, wood chips, pellet) are marketed in a guaranteed quality. The priority is the establishment of biomass logistic and trade centres as reliable suppliers of wood biomass and heat. The quality of the biomass fuel is ensured by standardised controls. Uniform market images with strong brand identity promises a high recognition value to the customers, providing continuity and security, which is the responsibility of the Forest Cooperative Styria and the Styrian Chamber of Agriculture. Until now, the business concept of biomass logistic and trade centres has been unique in Styria.

Several groups of farmers are willing to start biomass logistic and trade centres in other provinces of Austria. A crucial motivation is the availability of supporting funds, such as LEADER funding.

![Organisational chart Biomass logistic and trade centres](image-url)
1.4.1 Description Biomass logistic and trade centres

http://www.biomassehof-stmk.at/

The central premise of biomass logistic and trade centres are:

- Increase security of biomass supply with a collective rural marketing channel for biomass fuels and energy services (e.g. wood energy harvesting contracting)
- Mobilise more biomass for energy purposes (wood chips, wood logs, pellets)
- Involve farmers and forest owners directly in the bioenergy market as operators of biomass trade centres (“Petrol station for biofuels”)
- Guarantee high quality of biomass fuels
- Customers: private households, operators of wood energy contracting and district heating systems, business enterprises (hotels etc.)

These criteria must be met:

- The operators are members of the Forest Cooperative (Waldverband)
- The operator group must consist of at least 10 forest owners
- Minimum quantity stored: 500 m³ energy wood or the caloric equivalent of 1 Mio. kWh energy
- Minimum requirements: storeroom, weighbridge, price depends on weight and moisture, additional storage area for the raw material
- Biomass centres are offering: Energy wood, woodchips, log wood and pellets from regional forests
- Importation of raw material from other countries is not allowed

Figure 14: Biomass logistic and trade centre in Waldstein Styria, Source: Waldverband Steiermark
Besides these specific criteria, national law and regulations have to be observed. In Austria, the operators need a business license for the establishment of a Biomass logistic and trade centre. Furthermore, it has to comply with the Forest Act and the soil, water and nature conservation Act. Depending on the location of the centre, other regulations have to be considered such as in the Traffic Act.

There are already three Biomass Logistic and trade centres in Styria (Source: Waldverband Steiermark):

<table>
<thead>
<tr>
<th></th>
<th>Waldstein</th>
<th>Pöstal</th>
<th>Hartberg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date opened</strong></td>
<td>May 2007</td>
<td>April 2008</td>
<td>October 2009</td>
</tr>
<tr>
<td><strong>Raw material supply</strong></td>
<td>60 members; 2,200 hectares</td>
<td>13 members; 3,000 hectares</td>
<td>50 members; 3,000 hectares</td>
</tr>
<tr>
<td><strong>Sales volumes</strong></td>
<td>7,000 loose cubic metres of wood chips; 400 stacked cubic metres of split logs</td>
<td>14,000 loose cubic metres of wood chips; 800 stacked cubic metres of split logs</td>
<td>14,000 loose cubic metres of wood chips 800 stacked cubic metres of split logs</td>
</tr>
<tr>
<td><strong>Product range</strong></td>
<td>Wood chips, split logs</td>
<td>Wood chips, split logs</td>
<td>Wood chips, split logs, pellets planned in future</td>
</tr>
<tr>
<td><strong>Heating oil substitution per heating season</strong></td>
<td>0.6 million litres</td>
<td>1.2 million litres</td>
<td>1.2 million litres</td>
</tr>
<tr>
<td><strong>Greenhouse gas production per heating season</strong></td>
<td>1,88 / t CO₂</td>
<td>3,7 / t CO₂</td>
<td>3,7 / t CO₂</td>
</tr>
<tr>
<td><strong>Target group</strong></td>
<td>Heating plants, hotel and restaurant trade, private customers</td>
<td>Heating plants, hotel and restaurant trade, private customers</td>
<td>Heating plants, hotel and restaurant trade, private customers</td>
</tr>
<tr>
<td><strong>Service</strong></td>
<td>Delivery and pick-up</td>
<td>Delivery and pick-up</td>
<td>Delivery and pick-up</td>
</tr>
</tbody>
</table>

Checklist for the implementation of a biomass logistic and trade centre (Source: Waldverband Steiermark):

- **Where is the raw material from?**
  
The potential suppliers should be in a distance of max. 30 km from the centre. Check if there are enough potential suppliers in this radius.

- **Who are the customers?**
  
  Check if there are enough potential customers, like Biomass district heating plants, CHP-plants based on biomass or private households and business enterprises, in the radius of 30 km. How high is the heat demand?
• **Which site requirements must be met?**

Information about the regulatory framework are required, e.g. solid and groundwater protection, emission and noise protection.

### 1.4.2 Biomass trade centre Pölstal

#### 1.4.2.1 Project Inception

The Biomass centre in Pölstal was established in April 2008. The cooperative, which operates the Biomass centre consists of eleven private forest owners, the municipal Pölstal and a cattle breeding cooperation. The reasons for establishing a Biomass centre in Pölstal was the wish of the municipal for a self-sustaining energy supply and the wish of the private forest owners to sell their wood locally. The implementation was supported by the Forest Cooperative Styria, who started the initiative and contacted forest owners. Agents of the Forest Cooperative Styria instructed the cooperative members about BLTC operation.

In addition to the 11 cooperative members as biomass suppliers, there is a fixed delivery contract with the local AFMC, which is composed of 100 members guarantees supply. The catchment area for supply is a maximum of 30 km.

Initially there was some scepticism about the high investment costs (about €600,000). This was offset by private forest owners generating higher profits due to the direct sale of heat, Regional subsidies (30% of the investment costs) also helped the Biomass centre Pölstal to open.

![Figure 15: Biomass logistic and trade centre in Pölstal Styria, Source: Waldverband Steiermark](image)

#### 1.4.2.2 Description of the procurement chain

The biomass suppliers are responsible for the forestry work related to harvesting, chipping and transportation. Every year, about 8,000 solid cubic metres of wood are transported to the biomass centre Pölstal. The delivery is concentrated in winter and spring, the delivery schedule will be arranged by telephone. The delivery is carried out mainly in agricultural vehicles and dump trailers, sometimes by truck. The Biomass centre has a hall, which is designed for the storage of 6,000 m³ of wood chips, as well as an external storage with an area of 20,000 m².

#### 1.4.2.3 Profitability

The biomass centre Pölstal currently offers only firewood or wood chips. Out of these, about 17,000 bulk cubic metre wood chips and 500 solid cubic metre firewood are sold every year. This
The biomass centre supplies two heat plants. About 6000 bulk cubic metre wood chips go to the heat plant in Oberzeiring (1,8 MW), the heat plant in Lachtal (1 MW) needing about 3500 bulk cubic metre every year.

Wood chips are sold at a price of 18 to 22 € per bulk cubic meters (depends on the quality and quantity delivered to customers), firewood is sold at a price of 52-66 € per solid cubic meter (soft and hard wood).

1.4.2.4 Strengths and Weaknesses
The strength of this cooperative is the high number of wood suppliers in the AFMCs, which can ensure a permanent supply. Because of the additional services, the short transport distances and the strong involvement of regional bodies, a high added value can be reached. The customers profit by the high quality provided by the biomass trade centre.

The high investment cost are a barrier, but with appropriate subsidiaries the establishment of a biomass trade centre is a win for all involved. There were, however, high requirements for the location (soil protection, ground water protection, minimal distance to residential neighbourhood), so the site selection was very complex. There are fixed contracts with heat plant, but the sales of firewood and wood chips through private customers is variable, but the principal customers are heat plants.
2 ‘Do’s and Don’ts’ for the establishment of woodfuel cooperatives

- Someone to drive cluster formation, such as a private forest owner, the municipality, or member of the agricultural chamber of commerce, a contractor, ... is needed.

- The contacts to the key actors, such as policy makers, potential customers and potential suppliers, are essential. For example, without the support of decision-maker and policy-maker, the planning consent can be very complicated and protracted in obtaining. At the beginning of the establishment of a supply cluster, there should be at least a pre-contract with one major, reliable customer, such as municipality buildings, offices or school buildings. In addition, the search for support is essential. Cooperations with dedicated and active persons as well as organisations with expert knowledge and experiences with establishing a fuel supply cluster and heat plants are desirable.

- The site selection of storage areas for wood, biomass centres and heat plants can be very difficult. First the legal requirements must be met, e.g. soil management and groundwater management. In addition, there can be very high investment costs for digging and land restoration (streets, sidewalk, railway, pipes and cables,...). Selecting the right location for storage areas and heat plants is critical.

- Consideration about emission and noise pollution should be addressed. It is essential to involve the potential neighbours in personal meetings and information sessions. Again, interpersonal skills (coordination and communication with all actors) of those developing the project are crucial. Do not underestimate the influence of local residents.

- Ensure an excellent working relationship with a person/ an organisation in the region/country who/which can support the establishment of the cluster and who/which is useful for the project as opinion leader and information distributer. So this person / organisation should already have some experience with biomass fuel supply and should be able to support the cluster with financial advice. Such a person could be a contractor who has already some experiences with the supply and operation of biomass heat plant or an organisation like the Bioenergie NÖ.

- In general you should intend to collaborate with the Associative Forest Management Community. This allows you to use the already established structures of the associative forest management community as well as activate some private forest owners. Furthermore the AFMCs have a lot of operating experience with forest fuel supply. Make sure that you can build up confidence between the cluster members, communicate and coordinate all of them and take their concerns seriously.

- Collate information about funding. Is there any funding of the government for biomass heat plants or is there any other funding, e.g. EU projects, LEADER funds etc.? Consider all possibilities.

- Take the publicity work seriously. Increase your PR, create your own cluster logo.
Assess the wood output potential in the region and hold some information sessions or workshops to show the potential this will increase regional and local stakeholder uptake.
### 3 Ideas generation and assembling of the key actors group

The following checklist gives guidance to prospective PFOs and cluster initiators on how to tackle the formation of woodfuel supply clusters.

<table>
<thead>
<tr>
<th>Process step</th>
<th>Investigated parameters</th>
<th>Actors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Inception</strong></td>
<td><strong>Is there a need for biomass fuel supply?</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Exchange of an old oil boiler in a public building with high heat demand like city hall, children’s nursery, school?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are there any rebuilding or new buildings in the region?</td>
<td>e.g. municipality</td>
</tr>
<tr>
<td></td>
<td>- Public decision: plan a biomass district heating system for future building areas before selling to private persons</td>
<td>mayor</td>
</tr>
<tr>
<td></td>
<td>- Public decision: plan a biomass district heating system for future building areas before selling to private persons</td>
<td>member of the agricultural chamber</td>
</tr>
<tr>
<td></td>
<td>- Public decision: plan a biomass district heating system for future building areas before selling to private persons</td>
<td>National government?</td>
</tr>
<tr>
<td><strong>2. Publish demand</strong></td>
<td><strong>Some options:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. The municipality or the housing developer contacts an interested fuel supplier.</td>
<td>municipality</td>
</tr>
<tr>
<td></td>
<td>2. A motivated private forest owner or a cooperative contacts the municipality as well as the housing developer and acts as an initiator</td>
<td>residential cooperatives</td>
</tr>
<tr>
<td></td>
<td>3. An energy supplier (electricity, gas) is interested to provide biomass district heating</td>
<td>private forest owner cooperatives and energy suppliers</td>
</tr>
<tr>
<td><strong>3. Activation of potential partners</strong></td>
<td><strong>Establishment of the “key actors group”</strong></td>
<td>Project manager:</td>
</tr>
<tr>
<td></td>
<td>- Are project partners needed?</td>
<td>e.g. member of AFMC</td>
</tr>
<tr>
<td></td>
<td>- Who has any experience with energy supply or biomass heating projects?</td>
<td>energy supplier</td>
</tr>
<tr>
<td></td>
<td>- Who are the (private) forest owners in this region and how are they organised?</td>
<td>contractor</td>
</tr>
</tbody>
</table>
| 4. Definition of project scope | **Who are other potential customers?**  
- Heat demand (projected stages of expansion)  
- Biomass demand?  
- Biomass source within a limited radius  
- Plant capacity?  
**Closing pre-contracts with potential customers!** | **Key actors** (→ Nr. 3) |
| --- | --- | --- |
| 5. Fuel suppliers | Who are the potential fuel suppliers?  
How many suppliers are needed?  
Are there already existing supply associations or cooperatives? | **Key actors** |
| 6. Organisation | **Defining the rules of the supply association/cooperative**  
- Who acts as the project leader (initiator?)?  
- Establishment of a cooperative?  
- Only fuel suppliers or also heat plant operators?  
- Provided service (large range: biomass supply contract [provided m³] – biomass heat plant operator [produced kWh] – district heating provider [distributed kWh] – contracting heating only or with energy saving actions on buildings [saving of total costs for heat demand for a building]) | **Key actors** |
| 7. Search for Supporters | Is there any person/organisation in the region/country which...  
- can support the implementation which is useful for the project progress as opinion leader and advocate  
- has already experience with biomass heat plants,  
- can help with financial advice? | **Project leader** (→ Nr. 6) |
8. Financing and Funding

| Capital contribution/ bonded capital? |
| Is there any funding from the government for biomass heat plants? Any other funding (Local government, national government or EU projects) for district heating systems, innovative energy saving systems, CO₂ reduction methods,...? |

Next Steps:
- Feasibility study
- Operation figures
- Profitability analysis

Project leader
References

Bioenergie NÖ: http://www.agrarplus.at/

Biomassehof Steiermark: http://www.biomassehof-stmk.at/


Annex 1: Articles of association of an associative forest management community (AFMC)
(Source: Waldwirtschaftsgemeinschaft Stockenboi 2010)

§ 1 Name, place, area of operation, legal form of organisation

1. The association’s name is: “Associative Forest Management Cooperative Stockenboi”
2. The association is located and registered in Stockenboi in Carinthia. It operates in the forest areas of the municipality Stockenboi.
3. The association is member of the regional forest association Carinthia.
4. The AFMC is a legal body governed by private law and has the legal form of an association according to Code of Civil Law.

§ 2 Purpose of the association

The activities of the forest association are a not for profit and have the aim to increase the productivity of the agricultural forest and thus to enhance the economic strength of rural holdings. This aim is to be reached voluntarily and based on self-responsibility and self-organisation.

The tasks of the local forest association can be:

1. Purchasing of forest seeds and forest plants, as well as machinery and equipment. Consultancy and support for the development of forest stands.
2. Support for all kinds of forest management measures in the rural forest in order to improve soil, stands and development of mixed stands adapted to the location, management of stands, soil health, separation of forest and pasture, fencing, fertilisation of forest etc.
3. Carrying out forest maintenance measures to protect species and stands (forest protection and game protection)
4. Promotion of forest development through building and maintenance of forest roads and skidding roads and purchasing of timber hauling machinery.
5. Increasing the selling of wood through professional processing, carrying out wood selling activities and utilisation of forestal arising above all biogenic fuels, bio heat plants etc.), measuring wood etc.
6. Promoting other forest operations such as protection of wood, rational wood utilisation etc.
8. Implementation or consultancy and support of management planning
9. Carrying out forest training and seminars, lectures, study tours, excursions etc.
10. Commissioning skilled workers (forest workers) for the management and protection of forest areas.
11. (Re)definition of boundaries if necessary.
§ 3 Resources needed to fulfil the purpose of the association

1. The forest association intends to raise the following material resources to achieve the purposes mentioned in § 2:
   a) Fees dedicated to special interests
   b) Funding schemes of the Federal State and Provinces;
   c) Donations.

2. For carrying out organisational tasks a membership fee has to be paid.

§ 4 Types of membership

The association’s members are either full, associate or honory members. Full members are those, who actively contribute to the association’s work. Associate members are those, who support the association’s activities above all by higher membership fees. Honory members are persons, who have been deemed to have special merit for the association.

§ 5 Acquiring the membership

1. All natural and legal bodies and legal private companies, that own forest land in § 1 mentioned areas, can become members of the association by submitting an application or payment of the first annual membership fee.

2. The association’s boards decides the admission of full and associate members. The admission can be denied without any statement on reasons. The nomination as honory member is effected by the board’s request and is implemented by the general assembly.

§ 6 Termination of membership

1. The membership terminates with the death of the member, for juristic bodies and legal private companies with loss of the legal entity, through voluntary termination and exclusion and closure of the association.

2. A voluntary termination of membership has to be communicated in written form to the association’s board to a term of a 1 year cancellation period.

3. The board can exclude a member, when the membership fee payments are interrupted for longer than six months, despite twice repeated reminders and setting adequate later time limits. The board can further exclude members when they severely breach the duties of the membership and in the case of dishonourable or for the association hurtful manner. The exclusion takes place without observance of a time limit.

4. The deprivation of a honory membership can be caused by a reason mentioned under paragraph 3. It will be requested by the board and concluded by the general assembly.

§ 7 Rights and duties of the members

1. The members are authorised to attend all events of the association and to use the services of the forest association for the benefit of their forest lands. Only full and honory members have the right to vote in the general assembly.

2. All members get the articles of association handed over by the board.
3. At least one tenth of members is necessary to request a general assembly called by the board.
4. In the general assembly the board informs members about the activities and financial situation of the association. If at least 10% of members request this information by any reasonable matter, the board has to inform the members about that at any time within 4 weeks.
5. The members have to be informed by the board about the reviewed balance of accounts. If necessary, the auditors have to be involved.
6. The members are obliged to promote the interests of the association as far as possible and to keep the reputation and the purpose of the association. They have to act according to the articles of association and the resolutions of the association’s bodies. Full and associate members have to pay their membership fees in time. The amount of fees is decided by the general assembly.
7. **The members have to market their round wood by the forest association.** The board decides about any kind of exceptional case.

### § 8 Bodies of the association

The bodies of the association are the general assembly (§§ 9 and 10), the board (§ 11 to 13), the auditor (§14) and the arbitral court (§ 15).

### § 9 General assembly

1. The general assembly is the “member’s assembly” for the purpose of association law from 2002. A mandatory general assembly takes place every year.
2. Optional general assemblies take place by resolution of the board or by the mandatory general assembly, requested in written form from at least 10% of the members, on request of the auditor (§12, p. 5, Association Act), on resolution of the auditor or on resolution of a curator order (§ 11, p. 2) within 4 weeks.
3. All members have to be invited to the mandatory and optional general assemblies at least 2 weeks prior to the meeting by post mail, fax or e-mail. The invitation should include the agenda of the general assembly. The calling of the general assembly is carried out by the board, the auditor or by a curator order.
4. Applications to the general assembly have to be submitted to the board by post mail, fax or e-mail at least 3 days prior to the meeting.
5. Resolutions are only valid when the request is foreseen in the agenda. Excepted from that are requests to call an optional general assembly.
6. All members are eligible to take part at the general assembly. Only full and honorary members have the right to vote. Each member has one vote. The transfer of vote rights to another member through written authorisation is permitted.
7. The general assembly has the quorum regardless of the number of attendees.
8. The elections and the resolutions in the general assembly are normally valid by simple majority of given and valid votes. Resolutions intended to change the articles or the closure of the association require a qualified majority of 2/3 of given valid votes.
9. The chair of the general assembly is taken by the chairman or when prevented for any reason by its representative. In the case the representatives are prevented as well, the oldest attendant board member takes the chair.
§ 10 Tasks of the general assembly

The general assembly is responsible for the following tasks:

a) Resolution to a tender  
b) Receipt and approval of a auditing report and the balance sheets with involvement of an auditor.  
c) Election and deselection of board members and the auditors  
d) Approval of legal businesses between auditors and association,  
e) Relief of the board  
f) Determining the amount of membership fees for full and associate members,  
g) Nomination and denial of honory members,  
h) Resolution about modifying articles of association and the voluntary closure of the association,  
i) Advice and resolution to other issues on the agenda.

§ 11 Board of the association

1. The board consists of 7 members, i.e. of the chairman and his two representatives, the secretary and its representative and the cashier and its representative.  
2. The board is elected by the general assembly. In the case of release of one elected member, the board has the right to nominate another electable member in place of. A subsequent approval has to be reached in the next general assembly. In case of unforeseeable longer absence of the board, the auditor has to call an extraordinary general assembly for a new election of the board. If the auditors are as well incapable of action, each full member can apply for a curator order at the responsible court to call promptly an extraordinary general assembly.  
3. The operative period of the board is three years, a re-election is possible. Each function of the board has to be carried out by one person. Each member of the board may carry out maximally two positions.  
4. The board is called up in written or oral form by the chairman, if absent by one of his representatives.  
5. The board has a quorum, if all members are invited and at least half of them are present.  
6. The board can pass resolutions with simple majority of votes. In the case of equality of votes, the vote of the chairman is valid.  
7. The lead is taken by the chairman, if absent by one of his representatives. If they are absent as well, the chairman is taken by the oldest available member or those board members, which is nominated by the majority of the board members.  
8. Apart from death case and ending operational period (p.3), the function of a board member expires through deposing the member (p.9) and resignation (p.10).  
9. The general assembly can depose the entire board or single board members at any time. The deposition comes into force when the new board or board member is nominated.  
10. The board members can declare their resignation in written form at any time. This declaration has to be addressed to the board, in case of resignation of the whole board to the general assembly. The resignation comes into effect as soon as the subsequent member is elected and coopted.
§ 12 Tasks of the board

The board has the leadership of the association. It is the “leading body” in terms of association law 2002. The board is responsible for all other tasks, which are not allocated to another association body by the articles. The board has to care above all about the following matters:

1. Setting up an adequate accounting system with at least continuous recording of incomes/expenses and maintain a list of assets.
2. Compilation of an annual estimate of costs, a statement of accounts and balance sheet.
3. Preparation and nomination of the general assembly in case of § 9, p. 1 and in the first three cases of § 9, p.2 of these articles.
4. Informing the association members about the activities in the association, the financial controlling and the reviewed closing of accounts.
5. Administration of the association’s assets.
6. Admission and exclusion of full and associate members of the association.
7. Admission and termination of employees of the association.

§ 13 Special obligations of individual board members

8. The chairman leads the current businesses and transactions of the association. The secretary supports the chairman in leading the association’s businesses.
9. The chairman is the official representative of the association. Written documents of the association require the signature of the chairman and the secretary, in case of financial matters the signature of the chairman and the cassier. Legal transactions between board members require the admission of one other board member.
10. Legal authorisations for the official representation or signatures can only be issued by the board members mentioned in p. 2.
11. In case of imminent danger, the chairman is allowed to issue orders in own responsibility – also in matters, which are in the scope of the general assembly or the board. Regarding internal matters, these orders require a subsequent admission by the responsible body of the association.
12. The chairman holds the chair of the general assembly and in the board.
13. The secretary takes minutes of the general assembly and the board.
14. The cashier is responsible for the correct controlling of the association’s incomes and expenses.
15. In case of absence the functions of the chairman, the secretary and the cashier have to be fulfilled by their representatives.

§ 14 The auditors

1. Two auditors are elected by the general assembly for a period of 3 years, a re-election is possible. The auditors are not allowed to be member of another body of the association – apart from the general assembly, whose activities are subject of the auditing.
2. The auditors are responsible for the controlling of current businesses and the financial conduct of the association regarding orderly accounting and the utilisation of resources.
according to the articles. The board has to submit the necessary documents to the auditors and has to give them all necessary information. The auditors have to report the result of the review/auditing to the board.

3. Legal businesses between auditors and association require an admission from the general assembly. Apart from that, the paragraphs § 11, p. 8 – 10, are accordingly valid for the auditors.

§ 15 Arbitral court

1. The arbitral court is set up in order to arbitrate all kind of potential disputes arising from the association’s activities. It is an arbitral institution in terms of association law from 2002 and no arbitral court in terms of §§ 577 following Civil Process Order.

2. The arbitral court consists of three full association members. It is set up in the way that one party in dispute suggests a member as arbitrator to the board. The board asks the other party in dispute to nominate another member as arbitrator for their concern within 14 days. These two arbitrators nominate a third full member as chairman of the arbitral court. The members of the arbitral court should not be member of any other body of the association, which is concerned by the dispute.

3. The arbitral court decides with single majority after hearing and considering both positions of the dispute in attendance of all its members. It’s decision should be to the best of one’s knowledge. It’s decisions are definite for association internal matters.

§ 16 Voluntary closure of the association

1. The voluntary closure of the association is only valid by resolution of the general assembly and with 2/3 majority of valid votes.

2. This general assembly has also to decide about the handling of any kind of available assets of the association. The general assembly has to nominate an administrator and conclude a resolution about the intended use of the remaining assets of the association, after covering all liabilities. If possible and permitted, these assets should be transferred to an organisation, which has the same or similar purposes like the association, otherwise to social welfare purposes.